

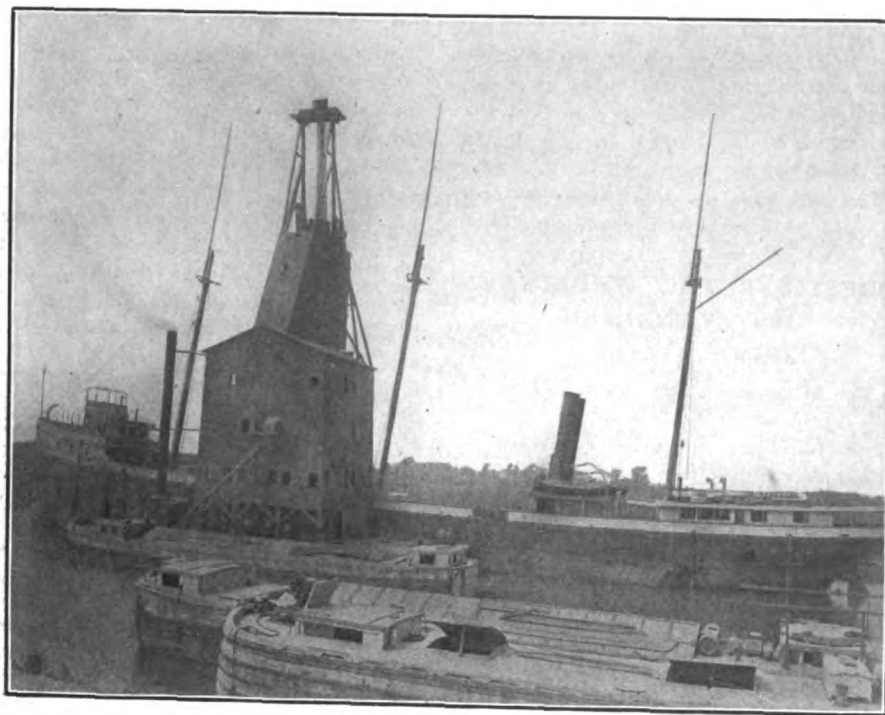
HISTORY OF BUFFALO GRAIN TRADE.

Buffalo is the natural grain outlet of the great lakes. Other ports have an elevator or two to receive some of the golden harvest which is shipped

Lake Michigan, as well as the only one that year. It was not till the following year that a bulk shipment was made from Chicago, the brig Osceola bringing down 1,678 bus. of wheat to Durfee & Kingman, millers at Black

in 1841 that Joseph Dart, by all right the pioneer in his line, began the erection of the Dart elevator on the spot where the Bennett elevator now stands. His determination was to erect his structure and use steam power and the conveyor principle invented fifty years before by Oliver Evans. In the face of many obstacles and predictions of failure, he began the construction of the world's and Buffalo's first elevator, marking a new era in the business of transporting grain from western granaries to eastern markets. This elevator was completed in 1842.

Mahlon Kingman, a forwarding merchant at Buffalo, and probably a member of the firm of Durfee & Kingman, who had tried a horsepower elevator and failed, laughed at Dart's attempt to improve on old methods, saying, "Irishmen's backs are the cheapest elevators." He did not mean disrespect to the sons of Erin, but rather paid tribute to their industry and explained in six words the unbelievably crude manner grain was unloaded in the old days. He, as well as others, took out his grain from the holds of the old-time schooners by sending it up ladders on the backs of men or hoisting it in barrels, and then putting it in baskets and having men lined up to carry it into the warehouses. The grain, ten or fifteen bushels at a time, was weighed by means of a hopper and scales swung over the hatches.



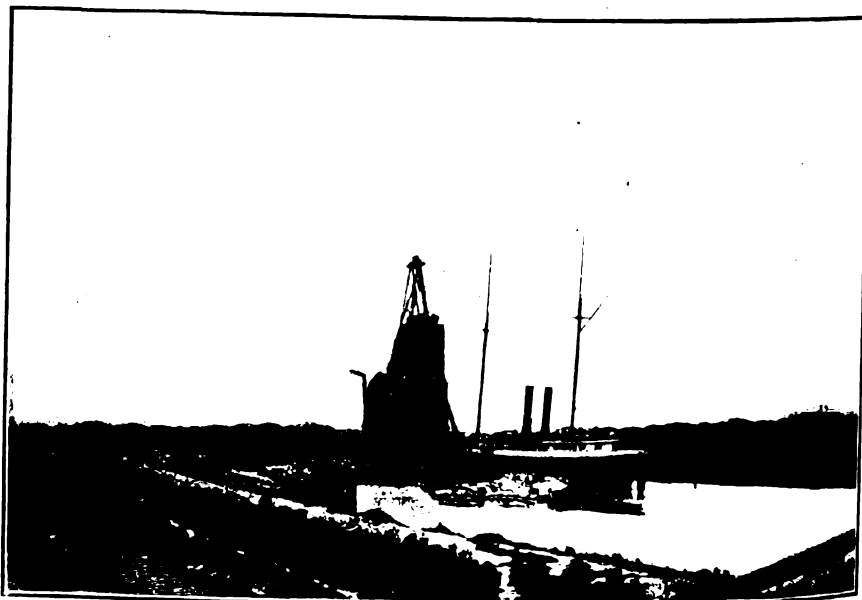
REAR ELEVATION SHOWING FLOATING ELEVATOR TRANSFERRING GRAIN FROM STEAMER TO CANAL BOAT.

by water from the great northwest, but they are only used for local markets. The grain which finds its way to the Buffalo elevators is sent to all parts of the world. The modern lake leviathans pour their stores into the Buffalo elevators and cars or canal boats continue it on its way to the seaboard. Figuratively speaking, the crop is so great, there is always a golden stream reaching from the northwest to Buffalo.

According to old records, Buffalo was a grain-receiving port as early as 1828. The business, however, at that time was purely local, the grain being consigned to New York millers and shipped from Ohio ports. Levi Allen, an old Buffalo captain, is authority for the statement that he brought down 6,000 bus. of wheat in the United States in 1828. This was considered a big load and the methods of unloading were then so crude, it took five days to take out the cargo. This was considered good time, too.

The New York millers were in the habit of going up to Ohio ports in the first half of the nineteenth century, but it is related that the old steamer Great Western put into Buffalo in 1838 with thirty-nine bags of wheat consigned by a Chicago grain shipper to an Otsego miller. So far as is known, this was the initial shipment from

Rock. The schooner General Harrison loaded 3,000 bus. of wheat at Chicago in 1840 for Buffalo. The *Gazelle*



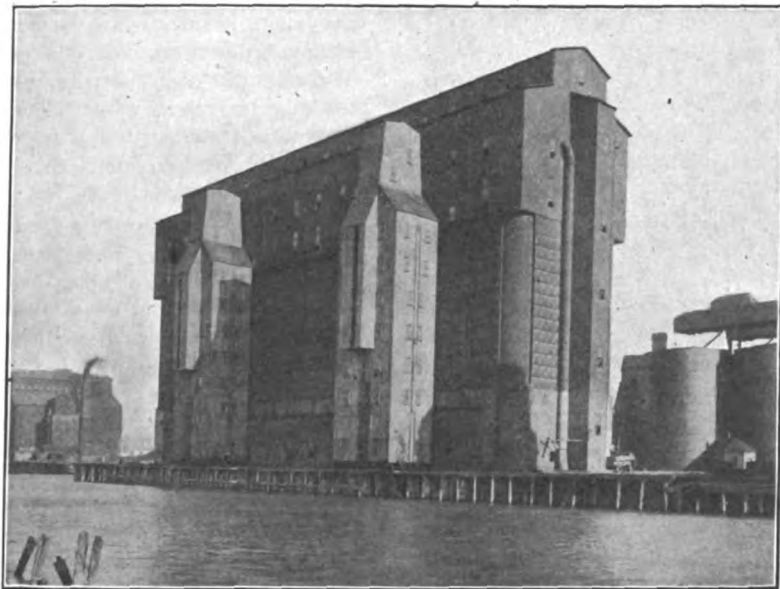
SIDE ELEVATION OF FLOATING ELEVATOR ELEVATING GRAIN FROM STEAMER IRON KING TO CANAL BOAT.

and Erie loaded 3,000 and 2,000 bus. of wheat the same year. These are said to be the first full cargoes.

Buffalo's grain traffic really dates from 1841, notwithstanding the fact that about 2,000,000 bus. of wheat had been received up till that year. It was

With fair weather, 2,000 bus. could be taken out in this way in a day.

Marine men generally and the public at large owe a debt first of all to Joseph Dart and then to Oliver Evans, though Joseph Dart, himself, modestly concedes full credit to Evans, say-



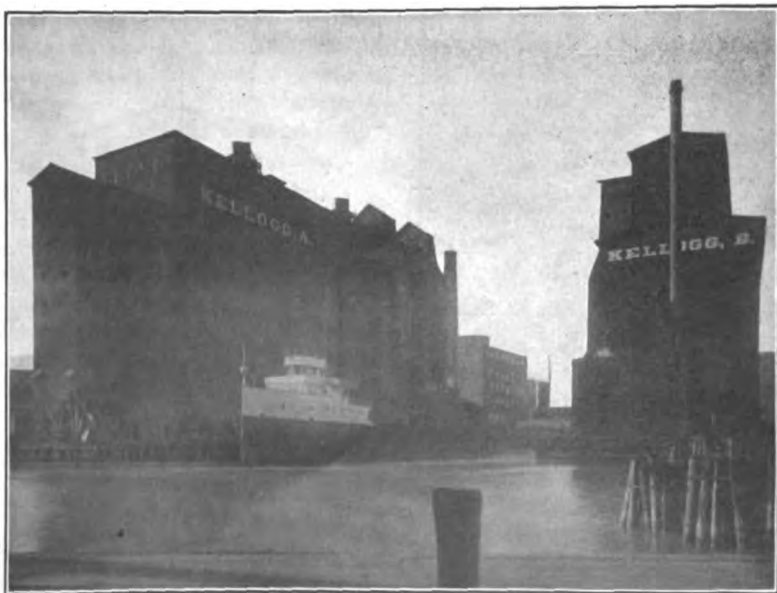
DAKOTA ELEVATOR.

ing he deserves a place at the side of Robert Fulton and Eli Whitney. Dart makes this statement because Evans invented the endless canvas or leather belt to which were attached buckets for taking up the grain through a leg. But Dart improved greatly upon the Evans' idea and it is to his credit to say that it remained for him to apply the Evans principle to the lakes. He was met with the rankest ridicule when he started in on his elevator, and it might be that years would have elapsed before it was adopted if he had not taken it up.

Evans had to contend with many obstacles in his day to work out his endless bucket and horizontal conveyor ideas. Joseph Dart relates that he was a natural-born mechanic who studied way into the night by the light of shavings when refused candles by his employer. As the result of all his study



MUTUAL ELEVATOR.



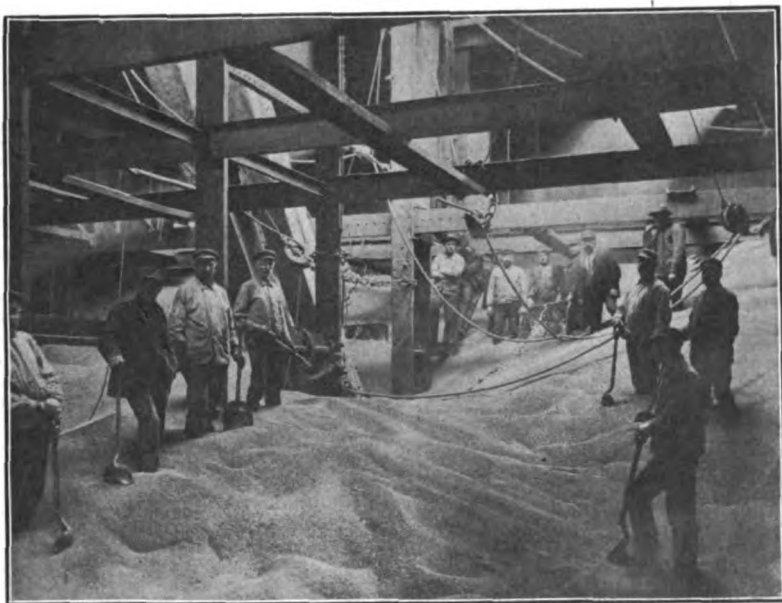
KELLOGG ELEVATORS. THESE ELEVATORS DO A BIG BUSINESS, THOUGH THEY ARE NOT SUITED FOR THE LATEST TYPE OF FREIGHTER.

and labor, he gained the knowledge necessary to write "The Young Miller's Guide and Millwright's Companion," still considered a standard work. Evans tried to introduce his elevator on the banks of the Delaware in 1785, but failed, and he afterwards had to defend his title to the invention. He also invented the method of keeping flour in motion and exposed to the air till thoroughly dry and ready for packing.

Dart's elevator was the first structure of its kind in the world, being then known as a steam storage and transfer elevator. From all accounts, it was the first to be operated successfully, though there is brief mention made of one built at Black Rock in 1840 by Lewis F. Allen and a Mr. Lord. This, it appears, was operated by water power with a leg on the Niagara

river side and the other on the harbor side. The only mention found of this elevator are the names of the designer of the machinery, Robert Dunbar, and the makers, Jewett & Root. It could not have been successful, however, for if it had, the grain traffic would have been diverted there.

If Joseph Dart had lived in the middle ages he would surely have paid the penalty of his seeming folly in erecting his elevator, but as it was he had the extreme satisfaction of living when and where there was no danger of being sacrificed for individual effort. His initiative bore fruit a thousand fold, and it appears that thirty days after his elevator was in operation, one of the doubting Thomases among the Buffalo forwarding merchants came to him and offered double his regular rates for emergency accommodation. This man had been free in his predic-



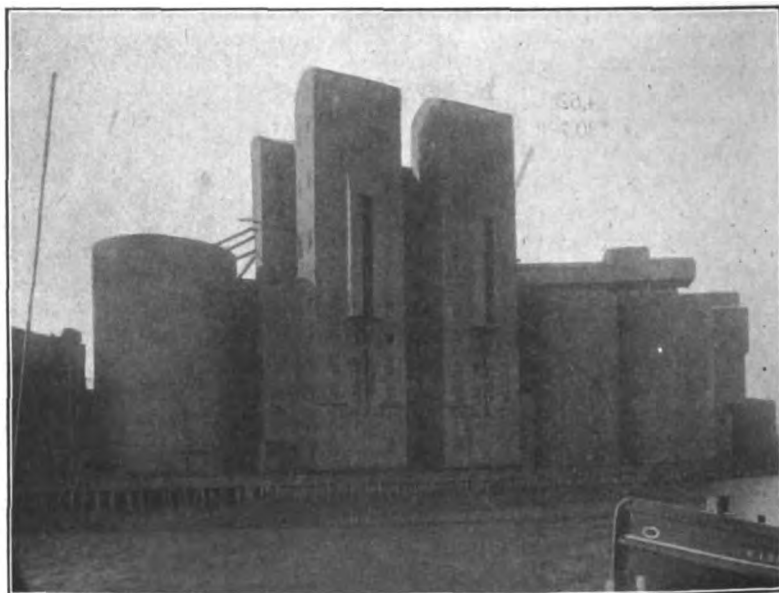
CLEANING UP THE LEG. IN THE HOLD OF THE STEAMER AURANIA.

tions that the forwarders would not pay the high charges demanded for a steam elevator. Dart's elevator, however, saved so much time, he saw the folly of his prediction and he capitulated.

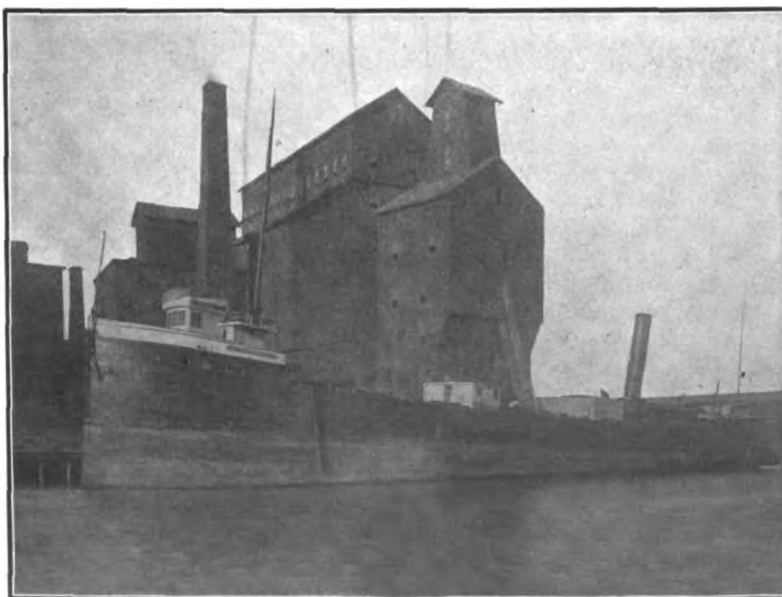
Today, the elevator business is on such a large scale, a big steamer carrying over 370,000 bus. has been unloaded in twenty-two hours working time. In 1828, it required five days to unload 6,000 bus., and in 1842 it required considerably less than a day to take out 4,000 bus. by means of the steam elevator. According to old records, the schooner John B. Skinner came in from Milan, O., early one afternoon with 4,000 bus. and unloaded and took on salt ballast late that same night. She got back to Milan, loaded another cargo and on her return from Buffalo for a third cargo, she went out in com-

pany with vessels which came in with her on her first trip. The funniest part of this is the fact that the boats went to Milan for their grain. There is no freight boat afloat today which could repeat the performance.

Dart's elevator had one leg when it was first operated and its capacity was 55,000 bus. Three years later the capacity was doubled and another leg was added. At that time, it had a slip under it for small boats. The schooner Philadelphia, commanded by Capt. Charles Rogers, was the first boat unloaded at the elevator, her cargo consisting of 4,515 bus. of wheat. It was consigned to H. M. Kinne and George Davis. The first corn cargo unloaded was from the South America, Capt. A. Bradley, consisting of 3,145 bus. This was June 22, 1843. During first year, the elevator elevated 229,260 bus. of



GREAT EASTERN ELEVATOR.



RICHMOND ELEVATOR, ONLY OPERATED DURING CANAL BOAT SEASON.

grain. The hourly elevating capacity was 1,000 bus. at the start with two-quart buckets set twenty-eight inches apart. This capacity was doubled by setting the buckets sixteen inches apart.

Lake freighters are now unloaded directly into the elevators, but the old-time boats and some which are still plying the lakes were unloaded by means of floating elevators, which, like the transfer towers, are no longer in use, and, one might say, no longer in existence. The floaters elevated the grain from a boat and loaded it into canal boats at the same time. Conditions were different then. With the present arch type boats, there would not be any chance to use floaters, nor could transfer towers be used.

Since the first Dart elevator, there have been a great many structures

erected, but the hand of time has wrought so many changes some of the elevators which were considered mammoth a few years ago are now limited on account of their location to certain sizes of boats. The 550-footer is restricted to houses like the Niagara, Erie, Export, Eastern and Mutual. A boat like the William P. Snyder will cover up three houses like the Union, Bennett and Evans. It might be said in this connection that if the 600-foot grain carrier is to come, some radical changes in Buffalo harbor will have to be made. The Snyder, Jones, or Laughlin are now winded out in the lake, causing big tug bills.

According to figures furnished by the Western Elevator association, the receipts of grain at Buffalo have been as follows:

1836, 543,461; 1846, 6,491,522; 1856, 20,123,567; 1866, 51,820,242; 1876, 44,207,121; 1880, 105,133,000; 1886, 72,349,236; 1896, 163,025,324; 1898, 221,383,945; 1899, 153,393,184; 1900, 157,655,969; 1901, 132,641,828; 1902, 124,626,438; 1903, 140,409,429; 1904, 100,880,795; 1905, 126,664,126. Although 1905 was a big year, the present year will offset it by many millions.

Joseph Dart and his supporters thought they were fortunate in having a 2,000-bu. hourly capacity, but this appears insignificant when it is known that the Mutual can elevate 30,000; the Dakota, 25,000, and the Eastern 20,000 an hour.

Buffalo has become a big harbor since 1842, and the storage capacity of the houses in the Western Elevator association, alone, is over twenty million bushels. In 1884, the grain men congratulated themselves on having enough elevators to handle 3,500,000 bus. of grain a day.

The most important additions to the original Evans' elevating principle are the portable legs and the steam shovel. The latter has made good dispatch possible when the car service is good and the elevators are not filled up.

Bertrand Vroman, of Put-in-Bay, who got first class pilot's papers last winter after studying with Capt. Gould, goes second mate of the Arundell on the St. Lawrence route when she starts in June. He is now wheeling on the S. J. Murphy.

Carl Ryberg, of Rush City, Minn., who lives on the banks of Rush Lake, is expecting to build a naphtha launch next winter. He is an oiler on the steamer Lake Shore. He has sailed two seasons, decking one year on the Fairbairn.

AROUND THE GREAT LAKES.

The Cleveland Furnace Co. has purchased a large tract of lime stone on Kelley's Island.

The steamer Black Lock pulled into Milwaukee last week with a broken wheel and will go into dry dock.

A revised chart in colors of Eagle harbor, Lake Superior, has just been issued by the United States lake survey and is for sale by the MARINE REVIEW.

Construction work of the new coal dock to be erected by the Pickands, Mather & Co., at Sweet's Point near Detour has been started. The dock will be 750 ft. long and 150 ft. wide.

The Reid Wrecking Co. of Port Huron has taken the contract to raise the steamer Mascotte sunk at her dock at Hancock, Mich.

In a fire drill on the City of Buffalo of the Cleveland & Buffalo Co.'s fleet, eight boats were dropped overboard and manned in five minutes.

A McMyler derrick crane, property of the Gillen Construction Co., toppled over at Racine last week. Fortunately no one was hurt.

The steamer Phoenix of the Phoenix Transportation Co.'s fleet is undergoing extensive repairs at the ship yard of James Davidson, Bay City.

The steamer J. T. Hutchinson is at Buffalo receiving repairs to her starboard quarter caused by a collision with the steamer Sultana in Lake Superior.

The steamer City of Grand Rapids, owned by John W. Averill, was sold last week for \$3,275 to Wm. H. Fitzpatrick of the firm of Tarnsney & Fitzpatrick.

The steamer Saxon which was stranded at Caribou Island has been placed in dry dock at Toledo. She has thirty damaged plates and it will take about ten days to make repairs.

President Livingstone of the Lake Carriers' Association, has wired that up bound vessels may load to 18 ft. 10 in. and down bound vessels 19 ft. 6 in. for passage through the lime kilns.

M. E. Farr has been elected president of the Detroit Ship Building Co. to succeed the late Wm. C. McMillan. He will continue as treasurer. Philip H. McMillan was elected vice president.

The steamer Byron Whitaker which sank in collision near the lime kiln, has been floated by Wrecking Master H. W. Baker and has been taken to the Ecorse yard of the Great Lakes Engineering Works for repairs.

The Detroit Trust Co. is trustee for the new issue of the \$75,000 steamship bonds on the steamer Midland Prince owned by the Midland Navigation Co.

and built by the Collingwood Ship Building Co., Collingwood, Ont.

The report published in the newspapers that the steamers Nottingham and Monroe C. Smith, beached at Buffalo, had been abandoned by the underwriters, is erroneous. Favorable progress is being made in releasing the steamers.

The Canadian government has given notice that a line of buoys has been placed 200 ft. eastward of the eastern end of the western breakwater at Port Colborne, Lake Erie, to mark a ridge thrown out by dredging. Mariners are warned to keep to the eastward of the buoys. There is a channel over 300 ft. wide between the buoys and the end of the eastern breakwater.

The steamer J. C. Pringle owned by the Olga Steamship Co., has been libeled by A. Hoffman, Tonawanda, owner of the schooner Buffalo, for \$2,000. A claim for the same amount was filed against the Buffalo by the City of Duluth. The Buffalo was at Duluth last November in tow of the J. C. Pringle when the anchor of the Buffalo dropped to the bottom of the harbor dragging up the city pipe line, hence the claim.

The steamer T. F. Cole, the longest freighter on the great lakes, and the most superbly equipped in point of accommodation for invited guests, left the Ecorse yard of the Great Lakes Engineering Works on Sunday last on her maiden trip for ore. President Harry Coulby of the Pittsburg Steamship Co., and President William Livingstone of the Lake Carriers' Association were aboard. She was given a noisy reception as she passed up the river. She is 605 ft. 5 in. over all.

The horrible fate of four members of the crew of the steamer Naomi who were burned to death in the fore-castle of that steamer in plain sight of the rescuing party has again called attention to the necessity of enlarging the port holes to promote the passage of a human body. The fire had cut off their escape through the natural opening, and the port holes were too small for them to go through. Quite a number of steamers on the great lakes have dead lights of ample orifice to permit the passage of a human being in the case of emergency, notably, the City of Buffalo and the City of Erie, the Juniata and Tionesta. General Manager Schantz of the Detroit & Cleveland line, now announces that the steamers of the Detroit & Cleveland line and the Detroit & Buffalo line will have their port holes enlarged at the close of the present season.